

REMARKS

This application has been carefully reviewed in light of the Office Action dated April 9, 2008. Claims 1 to 10 remain pending in the application, with Claims 11 and 12 having been cancelled herein. Claims 1, 5, 6 and 10 are the independent claims herein. Reconsideration and further examination are respectfully requested.

Claims 1, 2, 4, 6 and 7 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,961,616 (Wakasugi), Claims 3, 5, 8 and 10 were rejected under 35 U.S.C. § 103(a) over Wakasugi in view of U.S. Patent No. 5,818,603 (Motoyama), Claim 9 was rejected under § 103(a) over Wakasugi in view of U.S. Patent No. 6,175,603 (Chapman), and Claims 11 and 12 were rejected under § 103(a) over Wakasugi in view of U.S. Patent No. 6,453,272 (Slechta). Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention relates to an interface apparatus, to which information is input from an external apparatus according to a predetermined protocol which does not continuously transmit the same information. In the invention, a first circuit and a second circuit are used to eliminate complicated noise components. More specifically, the first circuit eliminates a glitch noise by fetching, after a predetermined time has elapsed from a time when input information changed, the information. Moreover, the second circuit determines whether the information fetched by the first circuit is the same as the information fetched by the first circuit a previous time, and does not output the fetched information if it is determined that the information fetched by the first circuit is the same as the information fetched by the first circuit the previous time, thereby skipping the information which does not match the protocol. On the other hand, the second circuit does

output the fetched information if it is determined that the information fetched by the first circuit is not the same as the information fetched by the first circuit the previous time. Accordingly, since the interface apparatus comprises these two circuits, it is possible not only to eliminate the glitch noise of the input information, but also to eliminate the information not matching with the protocol.

With specific reference to the claims, amended independent Claim 1 is directed to an interface apparatus to which information is input from an external apparatus according to a predetermined protocol which does not continuously transmit the same information, comprising a first circuit for waiting until a predetermined time has elapsed from a time when the information input from the external apparatus has changed, and after the predetermined time has elapsed from the time when the information input from the external apparatus has changed, fetching the information input from the external apparatus, and a second circuit for determining whether the information fetched by the first circuit is the same as information fetched by the first circuit a previous time, wherein the second circuit does not output the fetched information if it is determined that the information fetched by the first circuit is the same as the information fetched by the first circuit the previous time, thereby skipping the information not matching with the predetermined protocol, and wherein the second circuit does output the fetched information if it is determined that the information fetched by the first circuit is not the same as the information fetched by the first circuit the previous time.

Claim 5 is directed to a printer that substantially corresponds to Claim 1, while Claims 6 and 10 are method claims that substantially correspond to Claims 1 and 5, respectively.

The applied art, alone or in any permissible combination, is not seen to disclose or to suggest the features of the invention, and in particular, is not seen to disclose or to suggest at least the features of a second circuit for determining whether information fetched by a first circuit is the same as information fetched by the first circuit a previous time, wherein the second circuit does not output the fetched information if it is determined that the information fetched by the first circuit is the same as the information fetched by the first circuit the previous time, thereby skipping the information not matching with a predetermined protocol, and wherein the second circuit does output the fetched information if it is determined that the information fetched by the first circuit is not the same as the information fetched by the first circuit the previous time.

Wakasugi is seen to disclose a technique for eliminating a spike noise that occurs accidentally. That is, in Waksugi, data are first compared, and if the compared data are different (that is, a spike noise occurred), it is controlled not to obtain relevant data. Wakasugi is not, however, seen to teach the features of a second circuit for determining whether information fetched by a first circuit is the same as information fetched by the first circuit a previous time, wherein the second circuit does not output the fetched information if it is determined that the information fetched by the first circuit is the same as the information fetched by the first circuit the previous time, thereby skipping the information not matching with a predetermined protocol, and wherein the second circuit does output the fetched information if it is determined that the information fetched by the first circuit is not the same as the information fetched by the first circuit the previous time. Thus, independent Claims 1 and 6 are not believed to be anticipated by Wakasugi.

Motoyama is not seen to disclose or suggest anything that, when combined with Wakasugi, would have resulted in the present invention. In Motoyama, it is first determined whether or not a protocol identifier exists, and, if it is determined that the protocol identifier exists, it is then determined based on format data corresponding to the relevant protocol identifier whether or not an actual format of the subsequent data is correct. If the format data coincides with the subsequent data, it is determined that the data matches with the protocol. On the other hand, in the invention, if it is determined that the information fetched this time is not the same as the information fetched a previous time, it is determined that the information fetched this time matches with the protocol. Thus, the process of determining whether or not the data matches with the protocol in the present invention is completely different from that in Motoyama. Accordingly, a combination of Wakasugi and Motoyama would not have resulted in the features of a second circuit for determining whether information fetched by a first circuit is the same as information fetched by the first circuit a previous time, wherein the second circuit does not output the fetched information if it is determined that the information fetched by the first circuit is the same as the information fetched by the first circuit the previous time, thereby skipping the information not matching with a predetermined protocol, and wherein the second circuit does output the fetched information if it is determined that the information fetched by the first circuit is not the same as the information fetched by the first circuit the previous time.

Chapman and Slechta have been studied, but neither of those references are seen to disclose or suggest anything that, when combined with Wakasugi and/or Motoyama, would have resulted in the features of a second circuit for determining whether information fetched by a first circuit is the same as information fetched by the first circuit a

previous time, wherein the second circuit does not output the fetched information if it is determined that the information fetched by the first circuit is the same as the information fetched by the first circuit the previous time, thereby skipping the information not matching with a predetermined protocol, and wherein the second circuit does output the fetched information if it is determined that the information fetched by the first circuit is not the same as the information fetched by the first circuit the previous time.

In view of the foregoing amendments and remarks, amended independent Claims 1, 5, 6 and 10, as well as the claims dependent therefrom, are believed to be allowable.

No other matters having been raised, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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